

**Responses to Comments in Letter 31 from Doralee Booth, Birch Bay Resident**

***Note: The responses listed below are numbered to correspond with the numbers shown in the right-hand margin of the preceding comment letter.***

- 1      The commenter is correct that removal of the refinery boilers will not reduce all emissions generated by the cogeneration project. As indicated in Table 3.2-20 of the Final EIS, however, removal of the refinery boilers will reduce emissions for each criteria pollutant from the refinery. Section 3.2 of the Draft EIS has been updated and revised to explain more clearly how emissions for each criteria pollutant will increase or decrease if removal of the refinery boilers is considered. It should be noted, however, that for purposes of regulatory review and assessment of impacts on ambient air quality standards, refinery reductions were not taken into account.
  
2.      Regarding the explanation of health risks, the standards and thresholds used for regulatory review conservatively protect human health. Criteria pollutant emissions are evaluated for their potential to violate state and ambient air quality standards (see Table 3.2-11 of the Final EIS). The Environmental Protection Agency established ambient air quality standards to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly.

Should the governor approve this project, a Prevention of Significant Deterioration/Notice of Construction (PSD/NOC) permit would be issued to place conditions on air emissions from the project. Air emissions would be monitored on a regular basis and reported to EFSEC. Background monitoring would continue throughout Whatcom County and the Fraser Valley at existing monitor locations managed by the Department of Ecology.

The refinery’s Risk Management Plan (RMP) will be updated to include planned activities and responsibilities in case of an accidental catastrophic event or major release of ammonia. Refer to Section 3.16 of the Final EIS for additional information regarding the RPM.

3.      Thank for your comment. Every effort has been made to prepare a readable and concise environmental review document for the proposed cogeneration project.

**Responses to Comments in Letter 32 from John Williams,  
Williams Research, Portland, Oregon**

*Note: The responses listed below are numbered to correspond with the numbers shown in the right-hand margin of the preceding comment letter.*

1. Thank you for your comments. Responses to your comments can be found in Letter 17, Response 1(1).
2. Please refer to Letter 17, Response 1(2).
3. Please refer to Letter 17, Response 1(3).
4. Please refer to Letter 17, Response 1(4).
5. Please refer to Letter 17, Response 1(5).
6. Please refer to Letter 17, Response 1(6).
7. Please refer to Letter 17, Response 1(7).
8. Please refer to Letter 17, Response 1(7).
9. Please refer to Letter 17, Response 1(27).
10. Please refer to Letter 17, Response 1(8).
11. As described in Section 2.4.4 in the Draft EIS, alternative air emission control technologies were evaluated. Both SCONOX and XONON technologies were not selected for technological and economic reasons. The emission control technology that was selected is the selective catalytic reduction or SCR system. Anhydrous ammonia will be used in the SCR system to control of nitrogen oxide (NO<sub>x</sub>) emissions. This projected amount of ammonia from the exhaust stacks indicates that the public exposure to ammonia (approximately 5.8 µg/m<sup>3</sup> or 0.008 ppm) will be below the accepted range where an ammonia odor could be detected (5 to 53 ppm). Relative to the public health exposure of ammonia, the maximum projected ground-level impact of the ammonia emissions is about 6% of the 100 µg/m<sup>3</sup> 24-hour health-based standard identified in WAC 173-460.
12. Please refer to Letter 17, Response 1(10).
13. Please refer to Letter 17, Response 1(11).
14. Please refer to Letter 17, Response 1(12).

## Response to Letter 32

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15. Please refer to Letter 17, Response 1(13).
16. Please refer to Letter 17, Response 1(14).
17. Please refer to Letter 17, Response 1(15).
18. Please refer to Letter 17, Response 1(16).
19. Please refer to Letter 17, Response 1(17).
20. Please refer to Letter 17, Response 1(18).
21. Please refer to Letter 17, Response 1(19).
22. Please refer to Letter 17, Response 1(20).
23. Please refer to Letter 17, Response 1(21).
24. Please refer to Letter 17, Response 1( 22).
25. Please refer to Letter 17, Response 1(23)
26. Please refer to Letter 17, Response 1(24).
27. Please refer to Letter 17, Response 1(25).
28. Please refer to Letter 17, Response 1(26).
29. Please refer to Letter 17, Response 1(28).
30. Please refer to Letter 17, Response 1(29).
31. Please refer to Letter 17, Response 1(30).
32. Please refer to Letter 17, Response 1(31).
33. Please refer to Letter 17, Response 1(32).
34. Please refer to Letter 17, Response 1(33).
35. Please refer to Letter 17, Response 1(34).
36. Please refer to Letter 17, Response 1(35).
37. Please refer to Letter 17, Response 1(36).

38. Please refer to Letter 17, Response 1(37).

38. Please refer to Letter 17, Response 1(37).

**Responses to Comments in Letter 33 from Cathy Cleveland,  
Birch Bay Resident**

***Note: The responses listed below are numbered to correspond with the numbers shown in the right-hand margin of the preceding comment letter.***

1. Three noise monitoring surveys have been conducted. The last survey was coordinated with: Sharon Roy, Whatcom County Council; David Grant, assistant prosecuting attorney; and Jim Thompson, Whatcom County Planning and Development. This group chose three locations for additional monitoring. Monitoring results from these locations were used to model potential noise impacts resulting from operation of the proposed project. No additional noise monitoring is necessary.
2. Baseline noise monitoring collected data for 60 consecutive hours over three days and two nights.
3. This EIS evaluates the impact of noise associated with the cogeneration facility relative to ambient noise. Because the cogeneration facility would be quieter than the refinery, if monitoring were done when the refinery is exceptionally noisy the cogeneration facility would have even less of a relative impact.
4. Potential noise impacts resulting from operation of the proposed cogeneration project have been addressed in Section 3.9 of the Final EIS.
5. In Table 3.9-5 of the Draft EIS, the baseline noise levels are identified as “existing conditions.”
6. As noted on Page 3.9-6 of the Draft EIS, the primary difference between daytime and nighttime noises is “transient” noise. This is noise generated by traffic, which is typically heavier during the day than at night.

**Responses to Comments Presented at Public Meeting  
Held October 1, 2003 in Blaine, Washington**

*Note: The responses listed below are numbered to correspond with the numbers shown in the right-hand margin of the preceding public meeting transcript.*

1. **Mark Lawrence**

1(1) Thank you for your comment.

2. **Rob Pochert**

2(1) Thank you for your comment.

2(2) Thank you for your comment.

3. **Dan Newell**

3(1) Thank you for your comment.

4. **Wyman Bannerman**

4(1) Thank you for your comment.

4(2) The only modification made to the original photo was to add a typical monopole transmission tower. As is typical with photos of snow covered mountains in the distance, the mountains tend to blend with the background. Views with the naked eye reveal much greater contrast.

4(3) If Bonneville, the Applicant, and Alcoa Intalco Works are able to agree on a local remedial action scheme (RAS), generation output at the cogeneration facility would be reduced to the thermal rating of any line between Bonneville's Custer 230-kV station, its Intalco station, and the cogeneration facility. The existing lines are capable of 570 million volt amps, which loosely equates to 570 megawatts. During an outage (planned or unplanned) of any line section, power from the cogeneration project would be reduced to produce a net export of 570 MW. The cogeneration facility could continue to generate enough energy to serve the BP Cherry Point Refinery, supplying from 80 to 90 MW. The cogeneration generators would then produce 650 MW, or 70 MW less than their capacity. During other seasons, Bonneville does not anticipate that the RAS would be required because the ambient temperatures would allow for the additional transfers.

If the cogeneration facility were constructed and in operation, the BP Cherry Point Refinery would no longer be served by Puget Sound Energy (PSE) and its 115-kV system because of the difference in voltage (230 kV and 115 kV). It will no longer be practical for PSE to service the refinery. In Whatcom County, the PSE and Bonneville systems,

however, will continue to be interconnected at Bonneville's Custer and Bellingham stations to provide service to the Whatcom County area.

### 5. **Fred Schuhmacher**

5(1) As noted in Section 2.4.1 of the Draft EIS, air cooling was initially selected to minimize water use. When recycled water became available from Alcoa Intalco Works, water cooling was selected. The benefits of water cooling include a smaller footprint, less visual impact, less total water consumption, and lower cost. The adverse impacts include discharge of blowdown wastewater. These differences are outlined below:

- **Plant Footprint:** A water cooled plant is more compact than an air cooled plant. The stormwater detention pond can now fit inside the facility footprint after air cooling was replaced with water cooling.
- **Visual:** The water cooling tower is shorter than air cooled equipment. However, there is likely to be a visible water droplet plume from the water cooling tower, which is not present with an air cooling system.
- **Water Reuse:** A water reuse project requires less water withdrawal from the Nooksack River. The cost of the water reuse project is about \$2 million.
- **Cost:** Water cooling costs \$6 million and air cooling costs \$18 million, a difference of \$12 million.
- **Plant Efficiency:** A water cooled plant (consuming 4.5 MW) is 1.6% more efficient than an air cooled plant (which consumes 2.5 MW).

Wastewater discharge from the cogeneration facility is expected to increase discharge from the refinery by about 8% but with the treatment efficiencies of the refinery and dilution within the discharge zone. No adverse impact on the marine environment is anticipated (Kyte, pers. comm., 2004).

In Section 3.2 of the Final EIS under the heading Cooling Tower Steam Plume Fogging and Icing, potential impacts from the cooling tower vapor plume are described. The results of the modeling indicate that there would be a visible vapor plume emanating from the tower with the potential for fogging a couple of hours per year. This vapor plume is not expected to be seen beyond Grandview Road adjacent to the cogeneration facility.

5(2) Thank you for your comment. TransCanada will not be identified as the owner/operator of the cogeneration facility. If there is a change in the ownership of the facility, the current and new owners must get authorization from EFSEC pursuant to applicable laws and rules.

### 6. **Sam Crawford**

6(1) Thank you for your comment. Please refer to Letter 3, Responses 1 through 13.



- 6(2) Thank you for your comment. The Applicant will continue its community outreach program during the permitting, construction, and operation of the cogeneration facility.

7. **Frank Eventoff**

- 7(1) Impacts on the Fraser Valley are analyzed in Section 3.2 of the Final EIS. It was determined that the project emissions would not violate Canadian air quality standards or objectives.

8. **Sandra Abernathy**

- 8(1) The noise impacts from the project are described in detail in Section 3.9 of the Final EIS. It was demonstrated that noise emissions from the project would meet all regulatory thresholds, and that local residents would not be able to discern any increase above ambient levels.

The impact of air emissions from the project is analyzed in Section 3.2 of the Final EIS. The emissions from the project would meet all U.S. and Canadian regulatory standards and objectives. In addition, the Applicant has committed to removing three refinery boilers, which would greatly reduce NO<sub>x</sub> emissions to the airshed.

9. **Wendy Steffensen**

- 9(1) The project site and laydown areas would be designed with stormwater detention ponds to control the quantity and quality of the stormwater runoff from these areas. These ponds would be designed to reduce peak flows and allow solids to settle out before the water is discharged into the Terrell Creek drainage basin. Most of the water from the project site would flow to a wetland mitigation area, which would further slow the water entering the creek. These modifications will improve the quality and runoff rate of water entering Terrell Creek.

The project will not be a source of acid rain. Nitrogen oxide (NO<sub>x</sub>) emissions from the project would be limited to low levels through the use of clean natural gas and Best Available Control Technology (selective catalytic reduction technology). Sulfur dioxide (SO<sub>2</sub>) emissions would be low because the natural gas fuel contains minimal sulfur compounds. Unlike coal or fuel oil, natural gas is the lowest sulfur containing fuel available, and it is generally not considered a source of acid rain. Refer to Letter 17, Response 1(27) for additional discussion of air quality impacts.

Disruptions to local freshwater ecosystems from the proposed project emissions are highly unlikely and not anticipated. However, through the site certification process, EFSEC has jurisdiction to stop operations and mitigation of impacts should a *direct* impact on nearby freshwater ecosystems be identified in the future.

- 9(2) The source of the information in the Draft EIS (Golder 2003) was incorrect. While Washington Department of Fish and Wildlife has identified most of the project site as

wetland, no priority habitat has been identified in any portion of the project. The Final EIS has been revised to reflect this information.

- 9(3) The project will burn a clean fuel, natural gas, and the resulting emissions will be dispersed over a wide area. Only a small fraction of the pollutants would remain in the vicinity of the project. Compared to coal and diesel fuel, natural gas combustion emits significantly lower quantities of criteria and toxic pollutants and, as stated in Response 9(1), is not a significant source of acid rain. Project emissions will be minimized through the use of Best Available Control Technology as explained in Section 3.2 of the Final EIS.
- 9(4) As stated in note 2a of Table 3.4-4 in the Draft EIS, several trace metals were not detected in the source water (Nooksack River) for the cogeneration facility. To calculate a discharge, the detection limit concentration was used. Those values were then multiplied by the concentration that would result from the cogeneration process (four times the concentration for regeneration water and 15 times the concentration for blowdown water). Note 3 in Table 3.4-5 of the Draft EIS states the treatment efficiency study shows the wastewater treatment plant reduces heavy metals. Thus, the actual discharge concentrations for these trace metals listed in Table 3.4-4 are expected to be much lower than those shown in the table and actually may not be present. Once cogeneration operations begin, the discharge concentrations would be measured and actual concentrations can be determined.

The project would not emit large quantities of heavy metals or persistent biocumulative toxins (PBTs) to the air because the fuel being burned (natural gas) is very clean. These heavy metals and PBTs would be emitted; however, the analysis in Section 3.2 of the Final EIS concludes that toxic air pollutants emissions are below regulatory levels of concern and are not expected to harm the environment.

- 9(5) As stated in the Sumas Energy 2 Final EIS, “market is expected to encourage the development of efficient power facilities to satisfy increasing power demands and to discourage the development of inefficient and unnecessary facilities. In this market, project developers are expected to move forward with construction of projects only when convinced demand exists for the power the facilities would produce. Project financing, likewise, depends on a demonstration of demand and economic benefit.” In short, power generated by the Sumas generation facility is intended to be sold to customers in the Bonneville grid, thereby meeting the customers’ needs for power. For purposes of evaluating impacts resulting from both Sumas and the proposed project, the Draft EIS included a cumulative air emissions evaluation on Page 3.2-44 in Table 3.2-28.

The Georgia Strait Crossing (GSX) pipeline is intended to supply natural gas to Vancouver Island, where it may be used for a Canadian generation project. If this pipeline project and a power facility are approved by the Canadian government and constructed, the power produced from these projects would primarily be available to purchasers on Vancouver Island. Cumulative impacts from construction and operation of

the GSX pipeline have been addressed the Final EIS. Please refer to Letter 25, Response 3(15).

**10. Alan Van Hook**

- 10(1) The project would emit only a small quantity of heavy metals because the fuel being burned (natural gas) is very clean. The project would not emit petroleum products but would emit volatile organic compounds (VOCs). The expected emissions of VOCs and heavy metals were modeled, and it was concluded that all air emissions from the project will protect ambient air quality standards and human health.
- 10(2) If the Alcoa Intalco Works stopped operations, Whatcom County as a whole would experience a reduction of air and water pollutants that are currently emitted by Intalco.
- 10(3) Thank you for your comment. The alternative analysis completed by the Applicant and described in the Application for Site Certification evaluated the following: (1) potential environmental effects of siting the proposed cogeneration facility elsewhere, and (2) potential water and air quality impacts if the proposed project were not built and power were generated by other means such as the burning of coal or from wind turbines. This analysis concluded that power generated by means other than burning natural gas would most likely result in more environmental impacts than those identified in the Draft EIS.

**11. Cathy Cleveland**

- 11(1) Modeling the deposition of particulate matter in local watersheds is not warranted because natural gas, a clean fuel, is being burned, and the emissions resulting from natural gas combustion are not considered a significant deposition source of PM<sub>10</sub>. The particulate matter emissions from the cogeneration project, although modeled as PM<sub>10</sub> for regulatory purposes, are less than PM<sub>2.5</sub>. This type of fine particulate behaves more like a gas and will disperse to a wider area; it will not deposit close to the site and in Terrell Creek as much as larger particles would.
- 11(2) Noise monitoring has been addressed in Letter 33, Responses 1 and 2. Prior to the Applicant's most recent noise monitoring, the Applicant met with County officials to discuss the collection of additional noise monitoring data. Mike Torpey and David Hessler met with Whatcom County Council Member Sharon Roy, Whatcom County Attorney David Grant, and Whatcom County Planning and Development Services Noise Specialist Jim Thompson. In light of the County's concern about noise, the Applicant asked the County to select the locations for additional monitoring. The County selected four locations: 8026 Birch Bay Drive, 4825 Alderson Road, Arnie Road east of Blaine Road, and Jackson Road across from the Puget Sound Energy gas metering station. The County did not select a location in the Cottonwood Beach neighborhood. However, the 8026 Birch Bay Drive location is nearby, approximately 3,000 feet south and slightly east of the Cottonwood neighborhood.